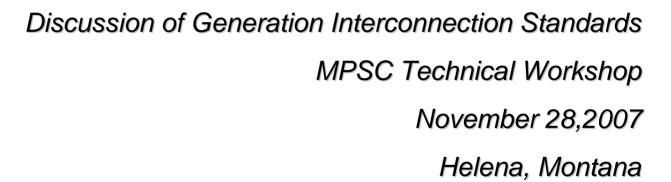




## Interconnection Technical Workshop





## Workshop Purpose

Explain NWE's present Interconnection policy procedures

 Discuss the feasibility of adopting IEEE 1547 as the Interconnection Standard for Montana

# NWE's Interconnection Policy

- Every Distribution Interconnection request is processed through one of two paths:
  - Net Metering requests
    - Facilitated by NWE's John Campbell
  - All other Interconnection requests
    - Facilitated through NWE's Transmission Planning Dept.



## NWE's Interconnection Requirements

 Distribution Interconnection requests are typically divided into the following categories:

## Net Metering projects

- 50kW and less
- Offsets customer's energy consumption
- Well established process
- Information and application are readily available from NWE's website
- Presently 350 installations on NWE's system

## Qualifying Facilities projects

- Typically 3MW and less
- Energy is sold to NWE for Default Supply Resources
- Process is similar to Transmission SGIA



## NWE's Interconnection Requirements

- Transmission Interconnection requests are typically divided into the following categories:
  - Small Generator Interconnection Agreement
    - Less then 20MW
    - Strict FERC Standards 2006-A are established
    - Facilitated through Transmission Planning Department
    - Well established application & study process
  - Large Generator Interconnection Agreement
    - 20MW and greater
    - Strict FERC Standards 2003-C are established
    - Facilitated through Transmission Planning Department
    - Well established application & study process



## Typical Interconnection Requirements

- Other than Net Metering projects, all Interconnection projects are studied and reviewed for items like:
  - Available system capacity
  - Effects of the generator on system
    - Load flows
    - Voltage
    - Fault duty
    - Stability
    - Flicker
    - Harmonics
    - Safety compliance
    - Operational jeopardy
    - Protective device coordination
    - Grounding issues
    - Losses



#### Individual Studies

- Each Interconnection Request requires an individual and unique study to ensure system compliance and compatibility
- No two Interconnection Requests are the same
- Due to wide variations in system configurations, there cannot be a common "cookie cutter" approach to Interconnection Requests



#### **IEEE 1547**

- IEEE 1547 is a Standard for Interconnecting Distributed Resources with Electric Power Systems
- IEEE 1547 is primarily intended for Interconnection of 10MW or smaller generators on a radial fed distribution system

#### **IEEE 1547 Limitations**

- IEEE 1547 does not address specific technical requirements like:
  - System capacity concerns
  - Fault duty issues
  - Safety compliance
  - Work rule effects
  - Operational jeopardy
  - Protective device coordination
  - System losses
  - Metering requirements



## Using IEEE 1547 at NWE

- NWE already considers and requires the basic requirements established in IEEE 1547
- IEEE 1547 is a minimum set of requirements to consider for Interconnection Requests
- IEEE 1547 cannot be used as the sole generic guideline for Interconnection Requests
- Due to system specific situations, NWE must have the right to add more stringent or modified requirements than IEEE 1547 to ensure that our operational system conditions are not jeopardized

#### Recommendations

- Accept IEEE 1547 as a minimum set of requirements for Interconnection Requests
- NWE must have the right to add more stringent or modified requirements than IEEE 1547
- Continue the practice of studying and reviewing each Interconnection Request to ensure system compliance and compatibility
- Continue to report on Interconnection Requests to the MPSC



# Questions